

02/03/14 Agenda

- Warm up exercise
- Quiz Corrections:
 - Quiz 5.4-5.5 corrections must be done by Thursday (2/6)
- Review Homework
 - Worksheet 6.2 day 2 - Solve Systems by Substitution
- Section 6.2 day 3 - Solve by Substitution

Homework - Worksheet 6.2 day 3 - Solve by Substitution

Warm Up - Homework out!

Solve using substitution:

$$x = 3y + 3$$

$$2x + 9y = 11$$

$$(4, \frac{1}{3})$$

$$x = 3x + 3$$

$$x = 3(\frac{1}{3}) + 3$$

$$x = 1 + 3$$

$$x = 4$$

$$2(3y + 3) + 9y = 11$$

$$6y + 6 + 9y = 11$$

$$15y + 6 = 11$$

$$\begin{array}{r} 15y + 6 = 11 \\ -6 \quad -6 \\ \hline 15y = 5 \end{array}$$

$$\frac{15y}{15} = \frac{5}{15}$$

$$y = \frac{1}{3}$$

Warm Up - Homework out!

The sum of 2 numbers is 21. Their difference is 5. What are the 2 numbers?

$8 = X = \text{smaller \#}$
 $Y = \text{larger \#}$

$$X + Y = 21$$

$$\begin{array}{r} Y - X = 5 \\ + X \quad \quad + X \\ \hline \end{array}$$

$$X + (X + 5) = 21$$

$$Y = X + 5$$

$$\begin{array}{r} 2X + 5 = 21 \\ -5 \quad -5 \\ \hline 2X = 16 \\ \hline X = 8 \end{array}$$

$$\begin{array}{r} X + Y = 21 \\ 8 + Y = 21 \\ -8 \quad -8 \\ \hline Y = 13 \end{array}$$

$$4. \quad -3x - 3y = 3$$

$$y = -5x - 17$$

$$-3x - 3(-5x - 17) = 3$$

$$-3x + 15x + 51 = 3$$

$$12x + 51 = 3$$

$$\underline{-51 \quad -51}$$

$$12x = -48$$

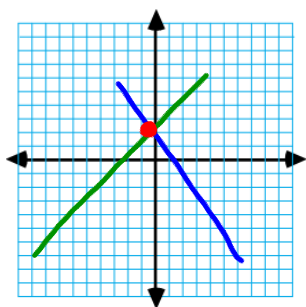
$$\underline{12 \quad 12}$$

$$x = -4$$

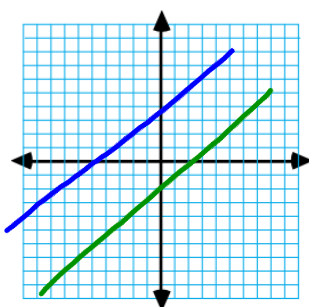
6.2 - Solve SoE by Substitution

Target 6B

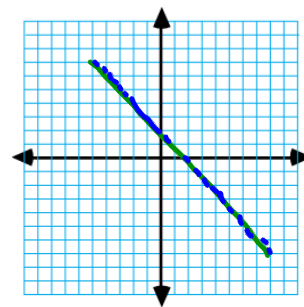
When graphing, we learned there are 3 types of solutions:



1
SOLUTION



NO
SOLUTION



∞ NUMBER
OF SOLUTIONS

Today, we'll handle the other 2 types:

Example:

$$\begin{aligned} x &= 4 - 8y \\ 3x + 24y &= 12 \end{aligned}$$

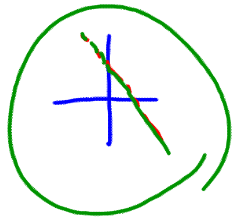
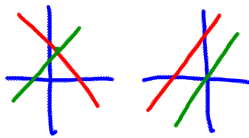
$$3(4 - 8y) + 24y = 12$$

$$12 - 24y + 24y = 12$$

$$12 + 0y = 12$$

$$12 = 12$$

TRUE
 ∞ # OF SOLUTIONS



$$2x + 2y = 8$$

$$x + y = 2$$

$$\begin{array}{r} x + y = 2 \\ -y \quad -y \\ \hline x = 2 - y \end{array}$$

$$2(2 - y) + 2y = 8$$

$$4 - 2y + 2y = 8$$

$$4 + 0y = 8$$

$4 \neq 8$
FALSE
NO SOLUTION

6.2 - Solve SoE by Substitution

Target 6B

Example:

$$y = 7 - x$$

$$y = 2x - 8$$

$$(5, 2)$$

$$y = 7 - x$$

$$y = 7 - 5$$

$$y = 2$$

$$(7 - x) = 2x - 8$$

$$7 - x = 2x - 8$$

$$\begin{array}{r} 7 - x = 2x - 8 \\ +x \quad +x \\ \hline \end{array}$$

$$\begin{array}{r} 7 = 3x - 8 \\ +8 \quad +8 \\ \hline \end{array}$$

$$\begin{array}{r} 15 = 3x \\ \underline{3} \quad \underline{3} \end{array}$$

$$5 = x$$

#4 $3y = 6x - 5$
 $y = 2x - 1$

$$3(2x - 1) = 6x - 5$$

$$\begin{array}{r} \cancel{6x} - 3 = \cancel{6x} - 5 \\ \hline -3 = -5 \end{array}$$

FALSE
NO SOLUTION

#1 $3x + 2y = 6$
 $x + 3y = 9$

$$\begin{array}{r} 3x + 2y = 6 \\ -(x + 3y = 9) \\ \hline 2x - 7y = -3 \end{array}$$

$$2x - 7y = -3$$

$$3(-3y + 9) + 2y = 6$$

$$\begin{array}{r} -9y + 27 + 2y = 6 \\ \hline -7y + 27 = 6 \\ -27 \quad -27 \\ \hline -7y = -21 \end{array}$$